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EXAMINER	
SINGH, SATYENDRA K	
ART UNIT	PAPER NUMBER
1657	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/822,006	YAMAMOTO ET AL.	
	Examiner	Art Unit	
	SATYENDRA K. SINGH	1657	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 June 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *31-34,36,37 and 39-59* is/are pending in the application.

4a) Of the above claim(s) *39-47* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *31-34,36,37 and 48-59* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *12 April 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Applicant's response and amendments to claim filed on June 10th 2008 is duly acknowledged.

Claims 1-30 (non-elected invention of group I), 35 and 38 have been previously canceled by applicants.

Claims 31-34, 36, 37 and 39-59 (as currently amended) are pending in the instant application.

Claims 39-47 (drawn to a cell culture apparatus of group III) remain withdrawn from further consideration.

Claim 31 (elected invention of group II, as currently amended) and claims 32-34, 36, 37, and 48-59 (group IV; drawn to a combination of cell culture carriers and cell culture apparatus as recited in claim 51) have been **rejoined**, and examined on their merits in this office action.

Election/Restrictions

Applicant's arguments (see remarks, page 8, in particular) regarding the restriction requirement of group II (claim 31; subcombination of granular cell culture carriers) and group IV (claims 32-34, 36, 37, and 48-59; combination of granular cell culture carriers with cell culture apparatus, as recited in claim 51) have been found to be persuasive to the extent that the restriction between the two groups (i.e. inventions of groups II and IV) has been withdrawn, and the claims 31 and 32-34, 36, 37, and 48-59 have been **re-joined and examined** in this office action.

However, the invention of group III (claims 39-47, drawn to a cell culture apparatus as specifically recited in claim 39) remain withdrawn from further consideration as the two

subcombinations can have separate and distinct utilities on their own, and the subcombination of group III does not require the cell culture carriers of group II for its patentability. The subcombinations are distinct and they do not overlap in scope and are not obvious variants, and as discussed in the previous office action, the subcombination of cell culture carriers are separately usable (i.e. for enzyme or antibody immobilization, and/or chromatographic purposes). Moreover, the subcombination as claimed in claim 39 does not require cell culture carriers having magnetic particles. Thus, the restriction requirement for group III (claims 39-47 drawn to a cell culture apparatus) is still deemed valid, and is therefore, made FINAL.

Claims 31 and 32-34, 36, 37, and 48-59 (groups II and IV, as currently amended) have been examined (to the extent they read on the originally elected invention of cell culture carriers comprising magnetic particles) on their merits herein.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

1. Claims 31 (as currently amended) is/remains rejected under 35 U.S.C. 103(a) as being unpatentable over Starling et al (US Patent 6,210,715 B1; [A]) taken with the disclosure of Kitano et al (US Patent 5,540,995; [B]) in view of Nilsson et al (GB 2,093,040A, published as WO 82/00660; IDS).

Claim 31 is directed to **granular cell culture carriers** to which cells can adhere to and grow on surfaces thereof, each of the granular cell culture carriers comprising: **a magnetic particle** having **a base body** having a surface, the base body being **formed by** compounding a **resin material** and a magnetic material so that the magnetic material is dispersed in the resin material; and **a coating layer** containing a **calcium phosphate-based compound**, the coating layer being provided to cover at least a part of the surface of the base body of the magnetic particle so that the cells can adhere thereto.

Starling et al [A] teach various cell culture carriers to which cells are allowed to adhere to and grow on surfaces thereof, wherein each of the carriers comprise glass or polymeric (such as polystyrene, polyethylene, dextran, gelatin, and/or glass) beads (suspendable or non-suspendable microspheres; solid or hollow; see Starling et al, abstract, summary of the invention, figures 1-1 and 1-2, column 10, 1st paragraph, in particular) that can be coated with a layer of calcium phosphate-based compound (CaP, such as hydroxyapatite, tricalcium phosphate, or other CaPs; see Starling et al, column 4, lines 1-3, in particular) to cover at least a part of the surface of the microspheres so that the cells are allowed to adhere thereto (also see Starling et al, examples 1-7, example 3 in particular); wherein the cell culture carriers have an average particle size in the range of 100 microns to 6000 microns, wherein the density of the carriers is in the range of 1.2 to 2 g/cc (which can be varied depending on the components of the microbeads and various desired applications; see Starling et al, column 3, lines 47-50, and examples 1-13, in general); wherein the coating layer is formed from porous particles of calcium phosphate-based compound using suitable processes such as spray granulation or disk pelletization (that are well known in the art; see Starling et al, column 16, last paragraph, in particular), and are sintered such that the porous

fine particles of CaP-based compound are partially embedded onto the surface of the polymeric microbeads (see Starling et al, examples 3-4, in particular), and provide increased surface area for greater activity in cell culturing applications (see Starling et al, column 17, lines 2-8, in particular).

Kitano et al [B] teach granular polymer composites (average particle size within the range of 1.2 to 30 microns; see abstract, summary of the invention, examples 1-7, and claims, in particular) comprising polymer beads (thermoplastic resins such as nylon, polystyrene, PMMA or polyethylene; see column 3, 2nd paragraph, in particular) having coated on the surface thereof a calcium phosphate-based compound (such as hydroxyapatite; see Kitano et al, column 3, last paragraph, in particular) such that the microcarriers or microbeads are suitable for allowing cells to adhere onto their surface (and thus suitable for the cell culture and/or related medical and diagnostic applications); wherein the coating layer is formed of fine, porous CaP particles that are partially embedded/penetrated into the polymeric microbeads at the vicinity of the surface thereof (see Kitano et al, column 2, lines 10-16, in particular) using a process that requires colliding porous CaP particles to the surface of the polymeric microbeads or microspheres (using Nara Hybridization system; see Kitano et al, column 5, 2nd paragraph, and examples 1-7, in particular); and wherein the density of the composite microcarriers range within 0.9 t o 1.2 g/cc (see Kitano et al, column 3, lines 39-47, in particular).

However, a cell culture carrier comprising **a magnetic particle** in combination with a polymeric resin material, having a surface that can be coated with **CaP-based compound** (as recited in the instant claim 31), is not explicitly disclosed by the teachings of Starling et al taken with Kitano et al.

Nilsson et al (IDS) teach cell culture carriers (microcarriers, suitable for use in the immobilization and cultivation of anchorage-dependent animal cells in and on the surface of the

carriers; see Nilsson et al, WIPO document, abstract, page 1, 1st paragraph, in particular) comprising a magnetic particle (consisting essentially of a ferrite, Fe_3O_4) having a surface, and a coating layer of gelatin or chitosan polymers (that can be cross-linked for improving mechanical strength of the microcarrier beads), and wherein the carriers have a particle size in the range of 100 to 250 μm (see Nilsson et al, pages 10-11, and claims, in particular). In addition, Nilsson et al disclose the general benefits of incorporating magnetic particles (such as Fe_3O_4) in the microcarriers (i.e. cell culture carriers) in order to permit the use of an external magnetic field in order to stir, suspend, and/or isolate the microcarriers (see Nilsson et al, abstract, and page 5, 2nd paragraph, in particular).

Given the detailed disclosure in the cell cultivation art, it would have been obvious to a person of ordinary skill in the art at the time this invention was made to incorporate magnetic particles (as taught by Nilsson et al) into the polymeric microbeads or cell culture carrier composition of Starling et al taken with Kitano et al such that the cell culture carriers have a magnetic particle having a surface, and a coating layer formed of porous, particulate CaP-based compound so that the cells are allowed to adhere to the surface thereof.

A person of ordinary skill in the art would have been motivated to modify the composition of Starling et al (taken with Kitano et al) by incorporating the magnetic particles in the microbeads, because Nilsson et al discloses the benefits of incorporating magnetic particles (such as Fe_3O_4) in the microcarriers in order to permit the use of an external magnetic field to stir, suspend and/or isolate the microcarriers (see Nilsson et al, abstract, and 2nd paragraph, in particular).

One of ordinary skill in the art would have had a reasonable expectation of success in modifying the cell culture microcarriers of Starling et al (taken with Kitano et al) using the teachings of Nilsson et al as they explicitly disclose the process of making such microcarriers (that are suitable for cell culture applications) by incorporating Fe_3O_4 particles in cross-linked gelatin or chitosan beads or microcarriers (see Nilsson et al, pages 10-11, in particular). In the absence of any evidence to the contrary, an artisan of ordinary skill in the cell cultivation art would have had a reasonable expectation of success in modifying the carriers as disclosed by Starling et al taken with Kitano et al (and in view of Nilsson et al) because all the components (and the method steps required to make such modification), and motivation for such modification are fully provided in the cited prior art references (when taken in combination), as discussed above.

Thus, the invention as a whole would have been *prima facie* obvious to a person of ordinary skill in the cell culture art at the time the claimed invention was made.

2. Claims 32-34, 36, 37, 48-59 (as currently amended) rejected under 35 U.S.C. 103(a) as being unpatentable over Starling et al (US Patent 6,210,715 B1; [A]) taken with Kitano et al (US Patent 5,540,995; [B]), Nilsson et al (GB 2,093,040A, published as WO 82/00660; IDS) as applied to claim 31 above, and further in view of deBruyne (US 4,498,785; [A]) and McCaffrey (WO 98/06485 A1; [N]).

Claim 51 is directed to "In combination, cell culture carriers to which cells can adhere to and grow on surfaces thereof, and **a cell culture apparatus** for use with the cell culture carriers; the cell culture apparatus comprising: a cell **culture vessel** for storing a cell culture solution containing at least cells to be cultured and granular cell culture carriers to which the cells are allowed to adhere and grow thereon; and at least one **magnetic field generator** for applying a magnetic field to the culture solution to agitate the culture solution by the effect of the magnetic field; and each of the cell culture carriers comprising: a magnetic particle having a base body having a surface, the base body being formed by compounding a resin material and a magnetic material so that the magnetic material is dispersed in the resin material; and a coating layer containing a calcium phosphate-based compound, the coating layer being provided to cover at least a part of the surface of the base body of the magnetic particle so that the cells can adhere thereto" (see recitations of the instant claims 32-34, 36, 37, 48-59, in particular).

The teachings of Starling et al taken with Kitano et al and Nilsson et al have been discussed above, and are further relied upon in the same manner herein.

However, in combination, **a cell culture apparatus** comprising a cell culture **vessel** and at least one **magnetic field generator** for use with the cell culture carriers of claim 31 (as specifically recited in instant claim 51) is not explicitly taught by the cited prior art references of Starling et al, Kitano et al and Nilsson et al.

deBruyne [A] discloses a cell culture apparatus comprising a cell culture vessel, for example, Pearson flask suitable for culturing adherent cells (see abstract, columns 2-3 and 7; figures 1, 7 and 8, in particular) and at least one magnetic field generator for use with the cell culture microcarriers and for applying a magnetic field to the culture solution to agitate the culture solution by the effect of the magnetic field (using a floating magnetic bar or stir bar magnet; akin to floating magnetic particles or cell culture microcarriers having magnetic particles).

However, deBruyne does not disclose a cell culture apparatus that includes **two or more magnetic field generators**, and wherein the position and intensity of the generated magnetic field is changed with lapse of time.

McCaffrey [N] teaches an agitator (suitable for use with cell culture vessels and flasks, etc; see abstract, figures 1 and 3, and claims, in particular) that comprises two or more magnetic field generators (wherein the magnetic material comprises ferrite material; see page 12) and, first paragraph, in particular), and wherein the magnetic intensity/strength and position of the generated magnetic fields can be varied depending on the requirement at hand (see pages 4-5, and claims, in particular).

Therefore, it would have been obvious to an artisan of ordinary skill in the cell culture art to use a cell culture apparatus as disclosed by the combined teachings of deBruyne and

McCaffrey that can be combined and used with the granular cell culture carriers having magnetic particles as disclosed by the combined teachings of Starling et al taken with Kitano et al and Nilsson et al. Such combination would have been obvious to an artisan of ordinary skill in the cell culture art as deBryne explicitly discloses the benefits associated with using an apparatus having a culture vessel and magnetic field generator for achieving safer and effective agitation of culture with microcarriers, with reasonable expectation of success. The variation in intensity, position and numbers of magnetic field generators would have been obvious as evidenced by the disclosure of McCaffrey for using an agitator having such capabilities that can be suitably used in combination with the cell culture apparatus and microcarriers or carriers as disclosed by the cited prior art references of record. Thus, the instant invention as claimed fails to distinguish itself from state of the art as represented by the combined teachings of the cited prior art references of record.

Thus, the invention as a whole would have been *prima facie* obvious to a person of ordinary skill in the cell culture art at the time the claimed invention was made.

As per MPEP 2144.06, "It is prima facie obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be used for the very same purpose.... [T]he idea of combining them flows logically from their having been individually taught in the prior art." In re Kerkhoven, 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980).

"[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

As per MPEP 2144.05 [R3], II. OPTIMIZATION OF RANGES - A. Optimization Within Prior Art Conditions or Through Routine Experimentation: Generally, differences in concentration or temperature will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such concentration or temperature is critical. "[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955).

Obviousness-type Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right

to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claim 31 and 32-34, 36, 37, 48-59 (as currently amended) are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 10 of copending Application No. 11/190,868 (common inventor and same assignee, PENTAX Corporation, Tokyo, Japan). Although the conflicting claims are not identical, they are not patentably distinct from each other because claims in the co-pending application are also directed to **a cell culture carrier** having a surface to which cells are allowed to adhere and grow, which is mainly made of a **resin** material (in the form of a base body) that can comprise a **magnetic** material, and the surface of said carrier can be coated with a **calcium phosphate**-based compound (albeit, in which a part of calcium is deficient). Since, calcium deficient hydroxyapatite materials are known in the art to be closure to the natural bone matrix composition, and since the cell adhesion property can be regulated by the ratio of Calcium and phosphate (Ca/P) in compounds such as hydroxyapatite (that are routinely used as a coating material for cell culture microcarriers in the cell cultivation and immobilization art; see disclosures of Starling et al, or Kitano et al), one of ordinary skill in the clinical art would have been motivated, and would have had a reasonable expectation in substituting an alternative calcium phosphate-based compound (i.e. an art-recognized functional equivalent) for the benefit

of controlling the cell-adhesive property of the cell culture carriers. The combination of cell culture carriers with a cell culture apparatus (as recited in the instant claims) for using said carriers comprising magnetic particles would have been obvious to a person of ordinary skill in the cell and tissue culture art as evidenced by the disclosures of the cited prior art references of record, especially in view of the disclosures of deBryne and McCaffrey (see discussion above). The two sets of claims are deemed co-extensive in scope, and therefore, an obviousness-type double patenting rejection is proper.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Response to Applicant's Arguments

Applicant's arguments with respect to claims 31 and 32-34, 36, 37, 48-59 have been considered but are moot in view of the new ground(s) of rejection.

However, for the record applicant's arguments filed with the office on June 10th 2008 (as they pertain to the prior art rejection of claim 31 over the cited references of record) have been fully considered but were not found to be persuasive for the following reasons of record.

Claim 31 is directed to "*granular cell culture carriers to which cells can adhere to and grow on surfaces thereof, each of the granular cell culture carriers comprising: a magnetic particle having a base body having a surface, the base body being formed by compounding a resin material and a magnetic material so that the magnetic material is dispersed in the resin material; and a coating layer containing a calcium phosphate-based compound, the coating layer being provided to cover at least a part of the surface of the base body of the magnetic particle so that the cells can adhere thereto*" which are disclosed by the cited prior art references

of Starling et al taken with Kitano et al and Nilsson et al as discussed in the obviousness rejection of record.

Applicants argue the following:

> "For instance, the cited documents fail to disclose or suggest at least at least "a magnetic particle ... formed by compounding a resin material and a magnetic material..." as recited in independent claim 31. Therefore, the requirement that all claimed elements be taught or suggested in the cited documents has not been met, and a prima facie case of obviousness has not been established" (see remarks, page 10, and last paragraph)

In response, it is noted that the instant claims are directed to a **product-by-process**, and "[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). In the absence of any evidence to the contrary, the granular cell culture carriers as taught by the combined disclosures of cited prior art references relied upon in the rejection of record are deemed to be the same, and therefore meet all the limitations of claim 31.

Applicant's argument (see remarks, page 11, last paragraph, in particular) that the office action provides "*insufficient motivation to establish a prima facie case of obviousness*", it is noted that on page 7 (1st and last paragraphs) the office action explicitly provides the benefits taught by Nilsson et al as to why an artisan of ordinary skill in the cell culture art would be motivated to incorporate magnetic particles in the granular cell culture carriers that were explicitly taught by the inventions of Starling et al when taken with Kitano et al (see discussion above). Contrary to the arguments presented by applicants, Nilsson et al clearly suggest the

benefits of incorporating magnetic particles such as Fe_3O_4 in the microcarriers in order to permit the use of an external magnetic field to stir, suspend and/or isolate the microcarriers (see Nilsson et al, abstract, and 2nd paragraph, in particular).

Applicant's argument regarding the patentability of the combination claims 32-34, 36, 37 and 48-59 (see remarks, page 12, last paragraph, and page 13) is not found to be persuasive because such combination of cell culture carriers with a cell culture apparatus for using said carriers comprising magnetic particles would have been obvious to a person of ordinary skill in the cell and tissue culture art as evidenced by the disclosures of deBryne and McCaffrey as relied upon in the rejection of record above.

The obviousness rejection of record under 35 USC 103(a) set forth above for the instant claims over cited prior art references is, therefore, properly made.

Regarding the ODP rejection of record, applicant's argument (see remarks, pages 13-14, in particular) is not found to be persuasive because, the scope of claim 10 in the co-pending application Sr. No. 11/190,868 (from the same assignee, having common inventor) is deemed to be co-extensive as discussed above, and thus in the absence of a terminal disclaimer, the ODP rejection of record is properly made and maintained.

Conclusion

NO claims are allowed.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SATYENDRA K. SINGH whose telephone number is (571)272-8790. The examiner can normally be reached on 9-5MF.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jon P. Weber can be reached on 571-272-0925. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Satyendra K. Singh/
Examiner, Art Unit 1657

/Irene Marx/
Primary Examiner
Art Unit 1651